

Preliminary Study of the Respiratory Disease Status of Wild Horses and Burros and the Genetic Analysis of Wild Horse and Burro Blood Samples

Project Summary and Objectives

Project Summary:

A nationwide field study to determine the source of *Streptococcus equi* and *Streptococcus zooepidemicus* infection in wild horses and burros (WH&Bs) in the USA was initiated in September, 2001. Overall herd disease prevalence data, as well as disease risk factor data, is being collected at BLM gathers during the 2001-2003 gather season. The primary objectives are to: evaluate the prevalence of *S. equi* and *S. zoo* infection in WH&Bs on public lands; determine the incidence of *S. equi* and *S. zoo* infection in removed WH&Bs; and determine the potential association of various environmental and management factors with this infection.

Secondary objectives include: evaluation of the prevalence of other important disease entities in WH&Bs on different herd management areas nationwide; and the feasibility of collecting samples and data from the WH&Bs during gathers. Biological samples and background information are being collected from WH&Bs with clinical signs of upper respiratory disease both during gathers and in BLM holding facilities, as well as from domestic horses in contact with WH&Bs. Samples are being tested to evaluate *S. equi* and *s. zoo* infection status. Collected data will be evaluated to identify possible sources of infection and recommendations will be made as to possible measures of control. In addition, blood will be collected for genetic analysis in order to make recommendations for genetic management of the herds. Serum will be banked at CSU for future testing for detection of antibodies to *S. equi*, as well as other disease control objectives.

Project Objectives:

The primary research objectives for the project are to:

- * Quantify baseline clinical IURD data on gathered as well as removed wild horses and burros.
- * Determine prevalence of clinical *S. equi* and/or *S. zoo* infection in wild horses and burros at initial gathering.
- * Quantify incidence of cases of clinical *S. equi* and/or *S. zoo* infection in removed wild horses and burros at various facilities in order to attempt to identify possible sites of exposure and management and/or environmental association factors for disease.
- * Collect and bank serum samples from a sub-population of both gathered-released and removed horses and burros for evaluation of herd genetic variability, to estimate levels of inbreeding, to propose methods of genetic management, and for future evaluation of disease exposure and vaccination responsiveness.